VARIOUS.

Pearl Inlaying.

Cast and sheet-iron and papier-mâché are the materials upon which pearl is generally inlaid. If the article be of cast-iron it is well cleaned from the sand which usually adheres to the casting, and is blackened with a coat of varnish and lamp-black. When this is thoroughly dried a coat of Japan or black varnish is spread evenly upon it. Before the varnish becomes too dry pieces of pearl cut in the form of leaves, roses, or such flowers as the fancy of the artist may dictate, or the character of the article may require, are laid upon the varnish and pressed down with the finger, and they immediately adhere to the varnished surface. The work is then placed in a heated oven, and kept there for several hours, or until the varnish is perfectly dried. It is then taken from the oven, and another coat of varnish applied indiscriminately on the surface of the pearl and the previous coating, and again placed in the oven till dry. This process is repeated several times. The varnish is then scraped off the pearl with a knife, and the surface of pearl and the varnish around it are found to be quite even. The pearl is then polished with a piece of pumice-stone and water, and the surface of the varnish is rubbed smooth with powdered pumice-stone, moistened with water.

It is in this unfinished state that the pearl has the appearance of being inlaid, and hence it derives its name. Its final beauty and finish depends altogether on the skill of the artist under whose hands the shapeless and almost unmeaning pieces of pearl are made to assume the form of beautiful flowers, leaves, &c. The artist traces the stems and leaves of the flowers with a camel's-hair pencil dipped in a size made of varnish and turpentine; upon this he lays gold leaf, which adheres where there is size, and the superfluous gold is carefully brushed off with a piece of silk. The flowers and leaves are then painted in colors, and when dry the picture and surface of the article are covered with a coat of refined white varnish.

The kinds of pearl used are three — mother-of-pearl, in the pearl oyster, or white pearl, as it is called by the artist, which is known by its clear white surface; aurora shell, which can readily be told by its wrinkled appearance and its various prismatic colors, and is made from the shell of the genus of mollusca known as the sear-ear or ear-shell, and known to the conchologist as haliotis; the green snail shell, which can be told by its glistening colors of light and dark green, or soft yellow and a bright and beautiful pink, blended together.

To manufacture the pearl ready for inlaying, the workman cuts the rough shells in pieces with saws, and then grinds the pieces on both sides upon a common grindstone until they are of the requisite thinness. Out of these pieces the artist cuts the forms of leaves, flowers, &c., with a pair of common scissors preparatory to placing them in the varnished surface. The necessary forms may be cut from the thin pieces of pearl by means of a punch and dies, with power applied by the foot of the operator. When a number of pieces are required of the same size, the pieces may be fastened together with glue as one solid plate, and then the required form marked upon the outside one; then these being held in a vice, the form can be carefully sawed out with a fine saw. By placing the cemented pieces in warm water, the glue softens, and the shells are easily separated, and the glue washed off.

This art of inlaying is not confined to the representation of flowers alone; landscapes with houses, castles, trees, churches, and bridges are very easily made, and when represented as being seen by moonlight are very beautiful. The rising moon can be represented surrounded by clouds of gold and silver bronze; and when pieces of pearl are placed in certain positions to reflect their colors, the moonbeams are represented as glancing over the landscape in alternate light and shadow.

The Furniture Gazette.

Improved Tanning Process.

After ten years' continuous research, Professor Knapp, of Brunswick, has discovered a process of replacing tan by certain chemical substances in the preparation of leather. By means of a fluid, whose chief constituents are water and a basic salt of iron, a leather is obtained which, it is asserted, as to flexibility and durability, is at least equal to that prepared in the ordinary way, while in some respects it is considerably superior. The chief advantages of the new process consist, according to a communication from Dr. Sierke, in a great saving of time and expense, and in the fact that tanners are put in a position to dispense with tan obtained from the bark of trees, the home supply of which in Germany has of late been far below the demand, and has consequently required to be supplemented by considerable importation from abroad. In Knapp's process, says *Design and Work*, the action of 9 lb. of his tanning salt, costing less than fourpence a pound, is equivalent to that of a cwt. of ordinary tan, and by its general adoption in German tanyards a saving of at least £ 270,000 might, consequently, be effected. The question of time, also, is of great importance — the usual system occupies from thirty-two to seventy-two times as long as Knapp's. Thus white heavy skins require about eighteen months for effectual tanning after the old method; the new process will turn them out equally well finished in seventy-two hours, while lighter skins are finished in little more than half that time. The main obstacle to the general practical adoption of the iron system is found in the prejudice of those connected with the leather trade, who are so wedded to their old ways that they cannot be induced to look favorably on such an innovation.

Use of Photography in Wood engraving.

In the practice of the ordinary method of wood engraving the artist whitens the surface of the block and makes his drawing thereon with India ink or pencil. The engraver then cuts upon the drawing, endeavoring to keep in mind the general effect of the original; but the latter is of course gradually obliterated as the work of cutting proceeds. To this obliteration of the original drawing is probably due a part of that loss of artistic effect in the finished engraving, of which draughtsmen are apt to complain.

The facilities offered by photography are now, however, being used by engravers and draughtsmen to assist in the production of better engravings. Instead of drawing directly upon the wood, the artist now makes his finished picture upon paper, which is then photographed upon the wood in exact *facsimile;* the engraver then proceeds to cut the photograph, and during the whole time of cutting he has before him the original paper drawing, to which he may refer for assistance in his endeavor to maintain and reproduce the spirit and feeling of the picture.

Scientific American.

Brilliant Relief Printing.

This interesting invention, which is claimed by several manufacturers, and especially by Thuillier, of Rouen, and Petit-Didier, of St. Denis, has been applied since 1866 to silken tissues, which are scattered over with brilliant points in relief, and of different colors so as to imitate embroidery. This style, which produces very pretty effects in a very economical manner, has had a very extraordinary demand. It is executed with a resinous matter, either colored or left colorless, which is deposited upon the tissue in melted drops by means of a plate engraved in relief. On cooling, these drops acquire hardness enough to form, so to speak, a part of the tissue and to resist friction.

Depouilly and Meyer have devised something analogous for fixing upon very light tissues, like tulles, brilliant drops in relief, which by their limpidity recall pearls or precious stones. They are obtained by means of gelatine or gums deposited while liquid by means of pins arranged symmetrically. This style has been named "diamond tulle". *Teinturier Pratique.*
